

REMARKS

This Response is in reply to the Examiner's comments set forth in the Office Action of July 7, 2009. Claims 49-78 are pending in the application. Claims 49-51, 57 and 61 have been amended. Claims 63-78 are new. Applicant asserts that the newly added claims contain no new matter.

Reconsideration is requested in view of the comments and amendments herein.

I. The Office Action

Claim 51 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

Claims 49-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP patent 6-70165 (corresponding to JP Application 61-278558, translation provided) to Toray Industries, Inc., in view of U.S. 2002/0009564 to Hall et al.

II. Indefiniteness Rejection

Claim 51 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to contain sufficient antecedent basis for the clause "the inorganic material." Claim 51 has been amended to recite "titanium nitride" rather than "inorganic material" to ensure proper antecedent basis is maintained. As such, the rejection should be withdrawn.

III. Obviousness Rejection

Claims 49-62 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Toray in view of Hall. Applicant respectfully submits that the rejection should be withdrawn for at least the following reason. Applicant respectfully submits that Toray and Hall do not, individually or in combination, teach or suggest the present limitations as recited in the newly presented claims.

The present application is directed to producing containers or performs that incorporate reheat additives that are efficient in producing reheat but avoid severe darkening of the polymer as exhibited when implementing common reheat agents, such as black carbon, graphite, etc. The present application is based on the use of titanium nitride, which can be used as a reheat agent at relatively low levels and in such a manner as not to have a significantly

detrimental effect on lightness (L^*) and/or have advantageous % reheat versus units of lightness lost. (See pages 29 and 30, lines 1-9).

In contrast, Toray is directed to providing "black spin-dyed polyester compositions...having excellent surface uniformity and having light-blocking properties." (See paragraph 1, page 2 of the translation). Toray compares the invention to the use of carbon black and suggests that the compositions of Toray may be used "for black spin-dyed threads, black spin-dyed films and light-blocking films that have excellent surface characteristics and only a few dropouts and other defects." (Page 5, point 3). Thus, Toray is not concerned with providing a reheat agent and rather stresses the light blocking and/or blackness of the films produced.

Furthermore, in Example 1, Toray discloses an L value of 14.0 and indicates that the polymer had an "excellent black color." Similarly, Example 2 discloses a low L value and a black color, and page 9 refers to specified films having only 1% transmissivity.

As such, there is no teaching or suggestion in Toray that would motivate a person skilled in the art to use titanium nitride as a reheat agent and nothing that would suggest that the titanium nitride may have any advantageous reheat properties compared to, for example, carbon black. Toray only refers to the effectiveness of titanium nitride in producing black products having excellent light-blocking properties.

Hall is directed to the production of low haze and transparent performs, which is exactly opposite to the black, low transparency compositions taught in Toray. Hall discloses a method for producing low haze, transparent poly(ethylene terephthalate) (PET), performs, bottles, sheet and thermoformed articles that contain an additive system and exhibit improved slip performance. In fact, Hall focuses heavily on the additives' effect on optical properties. Hall is clearly not only concerned with slip performance, but is also concerned with providing an additive having appropriate optical properties. In this regard, Hall discloses amides that "have a negligible effect on color," additives that do not produce "objectionable levels of haze," and provides extensive color measurement results. (See paragraphs [0013], [0016] and [0060]).

The Examiner reasons that since Hall discloses PET based compositions and indicates that "improved slip" characteristics are desirable for forming bottle performs, it would have been obvious for one of ordinary skill in the art to use the PET based compositions of Toray for making containers/performs. The Examiner further reasons that this combination is proper

since it is known in the art to use the same PET based compositions for production of films and bottles and since the composition of Toray exhibits characteristics desirable for compositions used for bottle forming. Applicant respectfully disagrees and asserts that Hall is additionally directed to the production of low haze and transparent performs. Toray is clearly concerned with providing black, relatively low transparency compositions. Accordingly, there would be no motivation for one skilled in the art to combine the teachings of Hall with the teachings of Toray. One of ordinary skill in the art would consider the Hall and Toray teachings mutually incompatible and teaching away from one another. Additionally, Applicant submits that neither reference is concerned with providing reheat agents for performs or containers.

With regard to independent claims 49, 60, 61 and 62, Applicant respectfully asserts that Toray in view of Hall do not teach or suggest titanium nitride present in an amount less than 500 ppm based on the weight of the polymeric material. The Examples in Toray describe the use of very high levels of titanium nitride. For example, Example 1 describes 1% of titanium nitride (10,000 ppm), Example 2 describes 1 wt % (10,000 ppm), and the other examples utilize the materials referred to in Examples 1 and 2. Therefore, Toray advocates, in specific embodiments, the use of 10,000 ppm titanium nitride. Given this and the fact that Toray relates to black spin-dye polyester compositions, there is no motivation to use a lower level of titanium nitride. We also note that the specific examples in Hall use at least 0.1 wt% of at least one of the slip agents, which equates to 1000 ppm.

Similarly, and with particular regard to newly added independent claim 63, for at least the reasons stated in more detail above, neither Toray nor Hall teach or suggest a composition that comprises a polymeric material and 25ppm or less of titanium nitride based on the weight of said polymeric material. This claim is based on the Examples provided in the present specification.

With further regard to claim 61, there is additionally no motivation from either Toray or Hall to select a preform for a container wherein the preform has improved reheat characteristics. Neither Toray nor Hall is concerned with reheat characteristics. Therefore, a person skilled in the art would not select such a preform. Furthermore, there is no motivation for a skilled person to select a preform having the composition described in the claim.

With regard to newly added independent claims 65 and 66, neither Toray nor Hall teach or suggest a composition that comprises a polymeric material and titanium nitride of average

particle size of 100 nm or less. This particular feature is based on page 12, lines 16-24 of the specification. The Examiner asserts that Toray discloses particles with an average size of 0.1 micrometers (Example 2) corresponding to the claimed particle size, Applicant respectfully disagrees. Example 2 discloses in the third paragraph, as follows, "when the particle size distribution of the particle in the resulting slurry was measured in the same manner as Working Example 1, the average particle size was 0.12 μm ." However, according to the first full paragraph on page 7 of the translation, it is the slurry (containing 0.12 μm of titanium nitride) that is added to the polymer. Thus, there is no disclosure in Toray of particles as described in the subject claims.

Furthermore, there is no motivation to modify Toray, based on Hall, to include such a small particle size. Toray is concerned with producing black spin-dried polyester compositions and, accordingly, the sizes of the particles used and their effect on optical properties may not be especially important. In fact, bigger particles may be more likely to be optically visible and therefore produce black material, consistent with the goals of Toray. In contrast, in accordance with the present invention, selection of the particle size affects light absorption as discussed on page 12, line 7 of the present specification. Smaller particles may increase the relevant absorption difference between the visible and infra-red portions of the spectrum. Furthermore, as discussed on page 13, line 1, by selecting small particles, the particles may be substantially optically invisible. It will be appreciated that being relatively optically invisible is important in accordance with the present invention but would be completely contrary to Toray, which aims to produce black materials.

With regard to newly added independent claim 67, the claimed L^* value (54.47) contrasts sharply with the L values in Examples 1 and 2 of Toray, which are 14.0 and 16.0 respectfully. Applicants note that Example 3 in Toray has an L value of 18. These L values demonstrate the compositions of Toray are relatively black, while those of the present application are relatively light and/or transparent.

With regard to independent claim 76, Applicant submits that Toray and Hall do not, individually or in combination, teach or suggest the step of "improving the reheat properties of a preform for a container." As stated in more detail above, neither Toray nor Hall is concerned with reheat characteristics; consequently a skilled person would not select such aperform.

Additionally, there is no motivation for a skilled person to select a perform having the composition described in the claim.

For at least the aforementioned reasons, newly added claims 63-78 are novel and unobvious over the presently cited references. Accordingly, the claims should be allowed.

CONCLUSION

For the reasons detailed above, it is respectfully submitted all claims remaining in the application (Claims 49-78) are now in condition for allowance.

Respectfully submitted,

Fay Sharpe LLP



Scott A. McCollister, Reg. No. 33,961
The Halle Building, 5th Floor
1228 Euclid Avenue
Cleveland, Ohio 44115-1843
216.363.9000

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